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Indian Standard

GLOSSARY OF TERMS RELATING TO
AIR CARGO PALLETS AND CONTAINERS

PART I AIR CARGO PALLETS

(First Reprint JULY 1997)

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BUREAU OF INDIAN STANDARDS

MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG

NEW DELHI 110002

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February 1974

AMENDMENT NO. 1 APRIL 1977
TO
IS : 7073 (Part I)-1973 GLOSSARY OF
TERMS RELATING TO AIR CARGO
PALLETS AND CONTAINERS

PART I AIR CARGO PALLETS

Alterations

(*First cover page, pages 1 to 7, Designation*) — Substitute ' IS : 7073-1973 ' for ' IS : 7073 (Part I)-1973 '.

(*First cover page, pages 1 and 3*) — Substitute the following for the existing title:

'Indian Standard
GLOSSARY OF
TERMS RELATING TO AIR CARGO
PALLETS AND CONTAINERS'

(*Page 3, clause 0.2*) — Delete the existing clause and re-number clause '**0.3**' as '**0.2**'.

(*Page 3, clause 1.1*) — Substitute the following for the existing clause:

'1.1 This standard covers basic terms relating to air cargo pallets and containers.'

Addenda

(*Page 7, clause 2.50*) — Add the following new terms after clause **2.50**:

2.51 Base — It is the bottom of a container, that may sometimes be a pallet which comes in contact with the floor.

2.52 Carriage — It is equivalent to the term transportation, means carriage of goods by air on an airport-to-airport basis, including all services of the carrier incidental thereto.

2.53 Container — It is a receptacle used to group individual items or packages into a single larger unit load.

2.54 Contour — It is a contoured container, one which is specifically designed to aircraft loading contours in order to utilize the maximum cubic space available in aircraft cabins or holds, subject to practical loading limitations.

2.55 Cross-Section — The constant cross-section is the internal contour of aircraft measured in a plane perpendicular to the aircraft length and excludes any tapered section of the fuselage.

2.56 Deflection — The changes in shape (bulge) of a sidewall or panel of a container or igloo (or component parts thereof) when subjected to compression loads.

2.57 Distortion — The permanent bulge or bowing of a panel beyond its original shape.

2.58 Dynamic Load Test — It means that the completely assembled and closed container is positioned on a platform scale and a moving platen is brought into position to apply a continually increasing pressure up to the limit required.

2.59 End — The walls of the container which, when loaded into an aircraft, are fore and aft.

2.60 Fill — To insert (load) goods into or onto a unit load device.

2.61 Fittings — It is in an aircraft, which means the restraint rails and floor locking devices installed to hold the aircraft unit load device. On a unit load device it may mean any supplementary hardware (buckles, rings) on the attachment points on the pallet.

2.62 Floor Bearing — The maximum weight that the aircraft floor is capable of withstanding. The distribution of weight evenly over the aircraft floor to meet weight and balance requirements.

2.63 Fore and Aft — The front and the rear (tail) of an aircraft.

2.64 Forklift Entry — Entries on the base of a container or aircraft unit load device to permit insertion of fork tines in order to move the unit.

2.65 Identification Code — The markings on a unit that indicates the type, size, category, serial number and restraint.

2.66 Inboard Side — The wall of a half size unit which faces into the centre-line of the aircraft.

2.67 Inter-model — Carriage by different modes of transport, that is, rail, truck, sea and air.

2.68 Internal Tiedowns — A means of securing cargo inside a container.

2.69 Markings — The registration markings on a unit load device to indicate the detail characteristics of the unit.

2.70 Non-aircraft Container — A box, either contoured or rectangular, primarily made of fibreboard or plywood but sometimes permanent metal or fibreglass materials, designed to be carried on or in an aircraft unit load device.

2.71 Ratings — For the ratings of containers suitable for air and surface transport, the following definitions shall apply:

- a) *Maximum Gross Mass (R)* — The maximum allowable combined mass of the container and its cargo;
- b) *Tare (T)* — Mass of the empty container, including its normal complement of loading restraint devices; and
- c) *Maximum Payload (P)* — The maximum allowable mass of the cargo equal to the difference between the maximum gross mass and the tare.

2.72 Side (of a Container) — The walls of a container which, when loaded in an aircraft, face the port or starboard wall of the fuselage.

2.73 Stacking — Placing one unit on top of another, or in multiples, either in a warehouse or in an aircraft, for purposes of saving floor space.

2.74 Unloading — Removing loaded aircraft unit load devices or bulk cargo from an aircraft.

2.75 Volume — The cubic capacity of a unit based on the external (or internal) dimensions.

2.76 Wall Deflection — Horizontal bulge of a container wall under compression.

2.77 Width — In relation to containers, measured across the aircraft.

*Indian Standard*GLOSSARY OF TERMS RELATING TO
AIR CARGO PALLETS AND CONTAINERS

PART I AIR CARGO PALLETS

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Indian Standard

GLOSSARY OF TERMS RELATING TO AIR CARGO PALLETS AND CONTAINERS

PART I AIR CARGO PALLETS

0. FOREWORD

0.1 This Indian Standard (Part I) was adopted by the Indian Standards Institution on 2 July 1973, after the draft finalized by the Containers and Pallets for Air Transport Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

0.2 This standard covers the terms relating to air cargo pallets. Part II of this standard shall cover the terms relating to air cargo containers.

0.3 This standard is based on the work done by ISO/TC 20/SC 9 — Air Cargo Technical Subcommittee. Considerable assistance has also been derived from 'IATA Bulk Unitisation', published by the International Air Transport Association (IATA).

1. SCOPE

1.1 This standard covers basic terms relating to air cargo pallets.

2. TERMINOLOGY

2.1 Air Cargo — Any goods carried or to be carried under the terms of international postal convention, or baggage or property of the carrier provided they are under an ' air way bill '.

2.2 Aircraft (Air Cargo) Pallet — A platform with a flat under surface manufactured to airworthiness requirement on which the goods are assembled and secured by nets/igloos and subsequently locked into the aircraft to achieve rapid loading/unloading on compatible aircraft conveying and restraint system. The pallet is capable of supporting and restraining its rated load when this load is subjected to specified 'G' forces and of transmitting these forces via the mechanical restraint system to the floor structure of the airplane (*see* Fig. 1).

2.3 Aircraft Pallet Net — It is a network of webbing ropes which are attached to the aircraft pallet for the purpose of restraining the load on to the pallet.

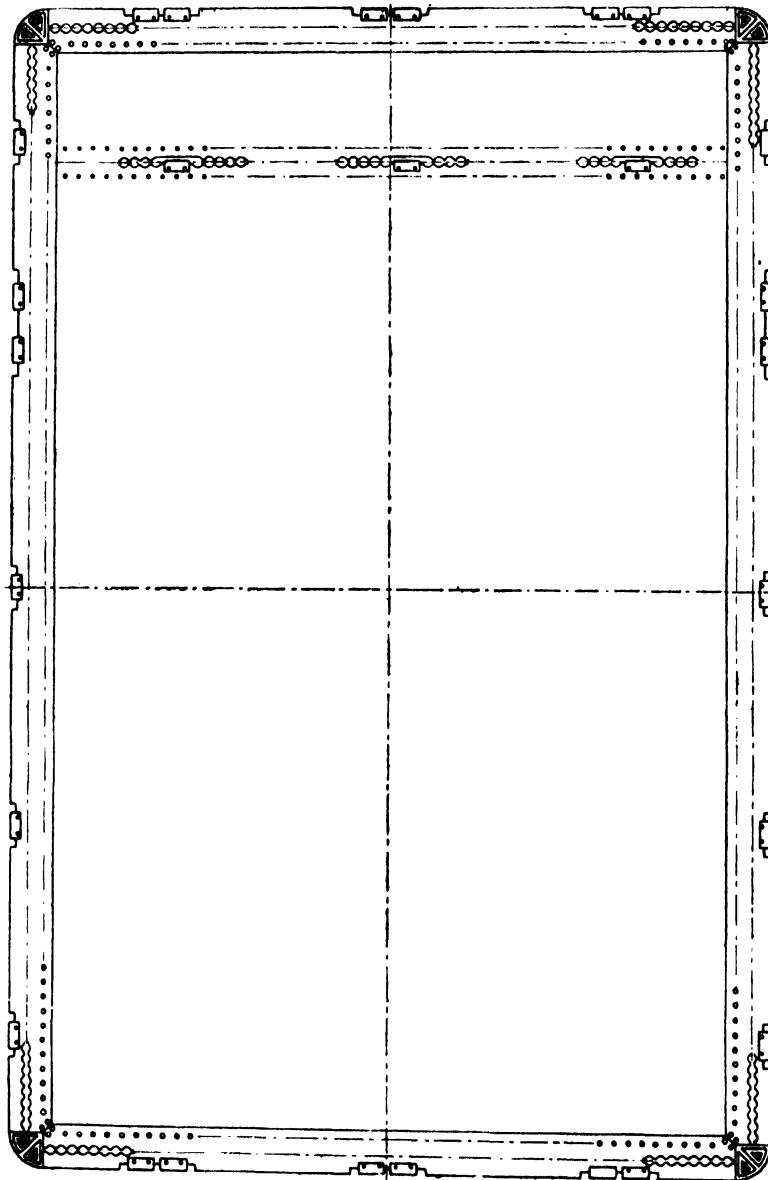


FIG. 1 AIRCRAFT (AIR CARGO) PALLET

2.4 Aircraft Unit Load Device — A unit that interfaces directly with an aircraft restraint system and meets all the restraint requirements without the use of supplementary equipment. It may either be a combination of components or one complete structural unit.

2.5 Air Way Bill — An air consignment note made by or on behalf of the shipper which evidences the details of goods carried over the route(s) by the carrier for the shipper.

2.6 Airworthy — The unit load device approved by governmental authority for compliance of specification and safety requirements for flight use.

2.7 All Cargo Aircraft — An aeroplane which carries only cargo.

2.8 Ball Mat — Horizontally installed section on top of the aircraft floor or in the pallet storage system consisting of housed ball bearings, used to provide omnidirectional movement for unit load device on it.

2.9 Belly — General term describing the portion of an aircraft fuselage below the main floor.

2.10 Belly Hold — Lower deck or lower compartment in an aircraft used for showing baggage, mail or bulk loaded cargo.

2.11 Cargo Cabin — The area of the main cabin of the aeroplane where air cargo is carried in bulk or in unit load devices.

2.12 Cargo Density — The relationship of cargo weight to its volume in a unit load device specified in kilograms per cubic metre (kg/m^3).

2.13 Cargo Hold — An area in the fore and aft sections of the aircraft below the passenger deck used to contain cargo or unit load devices.

2.14 Centre Line — A hypothetical middle line running fore and aft longitudinally in the aircraft against which the positioning of an aircraft unit load device may be assumed.

2.15 Clearance — The space allowance between the contour of the loaded aircraft unit load device and the wall of the aircraft to prevent damage by interference.

2.16 Compression Test — A test in which downward forces or stresses are imposed upon a unit load device to simulate either stacking in a warehouse or top loading and gravity pull during flight.

2.17 Cube-Utilization — The use of available space in an aircraft.

2.18 Delamination — The separation of the layers of bonded materials.

2.19 Design Gross Weight — The maximum weight on which the structural design of the unit load device is based.

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2.20 Design Load — The minimum static or dynamic load which the unit load device shall be designated to withstand and is developed by the product of design gross weight and the design load factor.

2.21 Design Load Factor — A factor which takes into account for the static and dynamic loads to which the unit load device is subjected in use.

2.22 Edge Rail — The outer frame on the base of a unit load device.

2.23 External Dimension — The extreme outside measurement, including any handles or other protrusions, on a unit load device.

2.24 External Volume — The volume of space that the unit load device occupies in an aircraft.

2.25 Flame Resistant — Fire-proof to the extent required by the appropriate airworthiness authority.

2.26 Floor Load — Static and dynamic loads imposed on the floor by the loaded pallet.

2.27 Floor Locks — The device installed in the aircraft floor which overlaps onto the aircraft unit load device for restraint purposes.

2.28 Footprint — The area of flat bottom surface on an aircraft unit load device that comes in direct contact with the aircraft floor (or in the case of a non-aircraft container, the part that comes in contact with the aircraft pallet).

2.29 G-Rating — Acceleration or deceleration of gravity forces exerted upon load flight. The G-rating is expressed as equal to the weight of unit load device and its associated restraint equipment plus its rated load.

2.30 Ground Handling — The method adopted by which cargo is handled on the ground to and from the aircraft.

2.31 Harness Straps — The webbing straps fitted with a sliding bar buckle on one end and other end free. This is used for lashing the load on the skid board.

2.32 High Density — Higher weight for a given volume.

2.33 Igloo — A bottomless rigid shell with a shape conforming to the aeroplane cargo area interior to provide maximum useable volume.

2.34 Loading — Stowing loaded aircraft unit devices or bulk cargo inside the aircraft.

2.35 Low Density — Lower weight for a given volume.

2.36 Maximum Aircraft Envelope — The maximum space available in the interior fuselage less 25 mm tolerance from the airframe manufacturer's constant cross-section contour to compensate for manufacturing variation and minor interior lining modifications made by carriers.

2.37 Maximum Gross Weight Permissible — The sum of the tare weight of complete unit load device and the maximum net weight permissible.

2.38 Pallet-Integral — A double layered platform, commonly made of wooden materials, forming the floor or attached to a container to provide forklift truck capability.

2.39 Restraints — The special fittings installed on the structure of the aeroplane to restrain the unit load device when acted upon by the flight loads.

2.40 Roller Conveyor — A conveyor system either in a aircraft or in a terminal facilities consisting of ball bearings and various size rollers over which aircraft unit load devices may be moved.

2.41 Scallion — A standard type end pitch borings in edge rail of an aircraft pallet to which nets or igloos are attached.

2.42 Seat Track — A scalloped cutout at 25 mm pitch around the periphery of the pallet within the edge member capable of taking standard tie down fittings.

2.43 Skid Board — A plywood board with a palletising flat surface underneath on which the load is placed and secured by harness straps. It is an aid to the load for sliding on the rollers/conveyor belts of the aircraft while loading and air dropping.

2.44 Static Load Test — A test in which pallet, after positioning on a platform scale, is uniformly loaded by stationary mass to cover the surface minimum of 80 percent of the area and remain in the condition for a given period of time.

2.45 Stirrup Attachment — A lip type fitting installed in a cutout in the edge member of the aircraft pallet to which a 9G overthrow strap or net is attached.

2.46 Tare Weight — The weight of the basic unit load device complete with all fittings integral to it or considered part of it.

2.47 Tare Weight Objective — A recommended but not mandatory weight target for materials to be used in the construction of the unit load device.

2.48 Tie-Downs — The attachment points on an aircraft pallet or a restraint device which are of specific rating.

2.49 Ultimate Load — The load under which the pallet exhibits permanent deformation but does not rupture to the extent of discharging cargo.

2.50 Unitization — To consolidate multiple packages or items into a single load.

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